GENERAL NOTES.

Notes from Florida.—In a letter to Dr. E. L. Sturtevant, Mr. William S. Allen, Chocaluskee, Monroe county, Florida, writes as follows: "I do not recollect whether in a former letter I ever informed you that many of our annuals are perennials here. One of my neighbors has a fine lot of Lima beans that have been in bearing for three years. They cover a wire fence about 100 yards long. Egg-plant, okra, peppers, cotton, tobacco, all are perennial. As a stalk of tobacco matures the leaves drop off, suckers put out, and in their turn ripen a crop, and it is not uncommon to cut three crops a year from the same land. I do not use the weed, but all my laborers, without exception, smoke and chew, and I find in out of the way places a dozen plants of tobacco growing wild, scattering seeds and holding their own for years without care. Wild cotton grows all around me. Some are standing where I found them when I came here thirteen years ago, and have been full of cotton every year since 1870. . . . . Common Indian pumpkins are perennial, but the Cushaw will only bear one crop, and then dies, as at the north."

It is not usually known that the cow-pea furnishes varieties which are esteemed as human food. Mr. Allen says, speaking of the Whip-poor-will pea, that, "It is generally known among farmers here as six-weeks pea, and is used both as a snap and shell. They are quite palatable. Farmers here make great use of them. In picking we pick partly full-grown pods, and partly mature peas that have not yet become dry. These are boiled together, and are a popular dish."

Melampyrum Americanum.—In July last I found growing on the North Valley Hill, Chester county, a broad-leaved variety of *Melampyrum Americanum*. The leaves are all *ovate* except the lowest pair, which are lanceolate, the uppermost having a minute tooth or two near the base, or very frequently none at all. The most striking peculiarity is that the spatulate cotyledons remain as long as the plant lives. It is so unlike the regular form that it seems hard to call it a mere variety, but on examination and comparison I think it can be nothing more, for of over one hundred specimens collected all maintained the above characteristics fully. The variety seems to have been over-looked by our botanists, for I see no mention of it in Gray, Wood, or the "Flora Cestrica" of Darlington.—S. T. Fergus, *West Chester, Pa.*

Puccinia heterospora B. & C.—In the September number of *Hedwigia*, Dr. G. Winter mentions a fungus on *Sida spinosa*, collected in Southern Illinois, by Mr. F. S. Earle. It is one of those troublesome species of *Puccinia*, having both one and two-celled spores; and an examination of my own specimens from Mr. Earle shows that in the two-celled spores (which are comparatively few) the position of the septum varies, being either transverse, longitudinal or oblique. In the *Journal of the Linnæan Society* for 1875 is the following description:

Uromyces Thwaitesii B. & Br., Maculis luteis hypophyllis; soris circinantibus

brunneis; sporis obovatis lalvibus longissime pedicellatis. On leaves of *Sida humilis* Willd. and *S. hirsuta*, Peradenia, Jan. 1855, Dec. 1867. There are rarely two cystoblasts parallel to each other.[1]

Dr. Winter has a specimen on *Sida rhombifolia*, from South Africa, and with this he compares Mr. Earle's specimen and finds it to agree. He refers it to its proper genus and calls it *Puccinia Thwaitesii*, (B. & Br.) In the Linnæan Journal, for 1869, is the following:

Puccinia heterospora B. & C. Soris minutis in glomerulos orbiculares congestis brunneis; sporis subglobosis, pedicello deorsum attenuato subæqualibus, demum biseptatis. On the leaves apparently of some malvaceous plant.[2]

I received specimens from Mr. Earle in the fall of 1882, but with the resources then at my command was unable to determine them. More recently I have had access to the Curtis collection and references to the above descriptions. A comparison shows Mr. Earle's specimen to be identical with the original of *Puccinia heterospora*. As I have not seen *Uromyces Thwaitesii*, I can not say whether it is identical with *Puccinia heterospora* or not, but in either case Mr. Earle's specimens must be referred to the latter, which is the older name.

The host of the Curtis specimen is pretty certainly *Sida triquetra*.

In *Grevillea*, Vol. III, Dec., 1874, is described *Uromyces pulcherrima* B. & C. on *Abutilon Texense*, from Texas. I have examined the Curtis specimen and can not distinguish it from *Puccinia heterospora*. The collection also contains specimens labeled *Uromyces pulcherrima* B. & C. on *Abutilon parvulum* and *Anoda hastata*.

A. B. Seymour.

EDITORIAL NOTES.

Dr. Carpenter, at the last meeting of the British Association, illustrated the power living forms have of adapting themselves to environment by the changes in the small-pox bacteria. Formerly the disease was very severe and known as the "black-pox," but at present it exists in a much milder form. During the last siege of Paris, however, the bacteria reverted to the original form and the "black-pox" again appeared.

We have had Kerner showing how plants have contrived to escape unwelcome insect visits, and our respect for plants has been thereby increased, although constructing a reason for everything is not always safe. But Mr. Alexander Wilson has gone farther, and at the British Association suggested that the closed ovary of the Angiosperms was a contrivance for the ovules to escape the attacks of parasitic fungi. That the closing up of the ovules is a hindrance to the action of the pollen can be understood, and to overcome it we find adaptations of tissue, modifications of structure, changes in the positions of ovules, etc. This outlay, Mr. Wilson reasons, is compensated for by some great advantage, which he concludes to be that already mentioned. He likens the closed ovary to Tyndal and Pasteur's sealed flasks, from which are kept all fungus spores.

[1] Berkeley and Broome, Ceylon Fungi, in Journ. Linn. Soc., Vol. XIV, p. 92, 1875.

[2] Berkeley and Curtis, Cuban Fungi, in Jour. Linn. Soc., Vol. X, p. 356, 1869.